GWYNNS FALLS SEWERSHED STUDY
DYE FLOODING PROTOCOL

DATE CREATED: 12/11/07
REVISED: 12/11/09
VERSION: 2.0

General

The subconsultant will be responsible for completing dye flooding of the storm drain inlets and/or house connections identified by URS. A dye flood inspection plat will be provided for each identified inlet and/or house connection to be inspected.

Dye floods will be limited to suspected storm drain connections located in the public right of way and roof leader connections from large residential facilities (e.g. apartment buildings, retirement homes, etc.). Suspected storm drain connections from individual residences will not be dye flooded.

Dye Flooding Subconsultant Responsibilities

1. All flood tests will be completed using the attached standard naming convention.

2. The subconsultant will provide an informational poster (36”x24”) as shown in the attached to the field crew. The crew will display the poster immediately adjacent to the flood test location.

3. The inspection crew will keep a copy of all pertinent Material Safety Data sheets (MSDS) with them at all times and will make all sheets available to any requestor. Additionally, the crew will keep a copy of the attached Field Work Authorization letter with them at all times.

4. The subconsultant will furnish all pertinent inspection documentation including field notes and/or sketches with each submission. The subconsultant will provide flood test documentation on a weekly submission schedule.

5. The subconsultant is responsible for coordinating dye flood activities with the CCTV subconsultant(s).

Products

1. The subconsultant will use City-supplied water, which may be obtained from local fire hydrants indicated on the inspection plat.

2. Tracer dyes may be tablet, powder or liquid form. Dyes may be fluorescent yellow/green, fluorescent red or fluorescent orange.

3. Inflatable plugs, sandbags or other flow restrictors or baffles will be used to isolate the storm drain segment for dye flooding. The subconsultant is responsible for completely removing all plugs, sandbags or flow restrictors. The team leader will immediately notify the City of Baltimore One Call Center (311) if a plugging device is flushed into the storm drain system.

Dye Flooding Procedure

1. A dye flood is considered complete and acceptable when all of the following are received by URS:

    a. Completed dye flood inspection database
    b. Original dye flood inspection plat indicating the dye injection location and general dye water infiltration/inflow location (e.g. clock position and distance from upstream or downstream manhole)
    c. CCTV inspection on DVD of sewer that clearly identifies the location of the dye infiltration/inflow source. Inspection will include audio description and location of the dye infiltration/inflow source. The audio description will also include the flood test and observation ID. The CCTV inspection will identify all lateral and house connections from upstream/downstream manhole to the infiltration/inflow source.

2. All dye floods will be recorded by means of closed circuit television using the Flexidata sewer inspection software. The coded CCTV video inspections will be completed in accordance with the Baltimore City standard CCTV Inspection Procedures and Specifications. At a minimum, all Flexidata dye flood records shall include the following entries:

    a. Start Survey
    b. Water Level
    c. Manhole (include manhole ID in the Comments field)
    d. Dye Test Not Visible (if appropriate)

    The subconsultant shall provide a PACP-coded video inspection for all inspection footage recorded. For each dyed water observation, the subconsultant shall enter the following observations:

    Crack Longitudinal (or other appropriate sewer defect code)
    Infil Runner (or other appropriate infiltration description) – record the estimated infiltration rate in the Comments field

    The subconsultant is not required to enter the Dye Test Not Visible observation for defects with no positive dyed water infiltration.

    The last defect recorded for a positive dye flood will be:

Abandoned Survey – record DYE TEST COMPLETE in the Comments field

3. The subsconsultant will plug the storm drain (see attached sketch) as necessary when injecting dyed water. At a minimum, the subconsultant will maintain six (6) inches of standing water (as measured from Location A of the attached sketch) in the plugged storm drain for the duration of the dye flood. The subconsultant will maintain this hydraulic condition for a minimum of 15 minutes. If dyed water is not detected in the sewer, the subconsultant will abandon the flood test and indicate in the inspection database/form comment field that no connection could be determined.

4. The subconsultant will inspect the sewer crossing the storm drain identified on the inspection plat. Additionally, the subconsultant will inspect the sewer immediately adjacent to the defect identified on the inspection plat (Note: for some tests, the adjacent sewer and the sewer crossing the storm drain may be the same). The two sewer inspections will be considered one dye flood test.

5. URS will contact property owners prior to releasing any inspection work on private property. Prior to beginning a dye flood on private property, the subconsultant will contact the building manager (contact information will be provided by URS) to inform them when the flood test will be performed and discuss any access issues.

Dye Flood Scheduling and Advanced Notification

1. The dye flood subconsultant will provide URS with a weekly schedule that identifies all flood test locations anticipated to be completed. The subconsultant will also provide a daily e-mail identifying the flood tests that have been completed for that day. Flood tests that were not completed on the scheduled date will be completed the following day, unless informed otherwise by the subconsultant.

2. Based on the subconsultant's weekly schedule and daily schedule update, URS will distribute all necessary advanced notifications.

Invoicing

1. Dye floods will be paid at the contract unit rate per each flood test completed. The CCTV inspection required for dye flooding will be paid at the contract unit price per linear foot, which will be measured (as recorded by the footage shown on the inspection video) from the manhole where the camera was inserted to the dyed water inflow/infiltration location. Payment will not be made for any footage beyond this distance.

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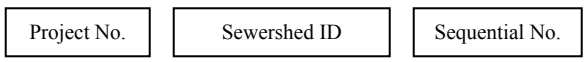
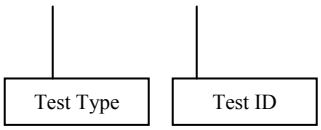
Standard Naming Convention

Flood Test ID: 1032-033001

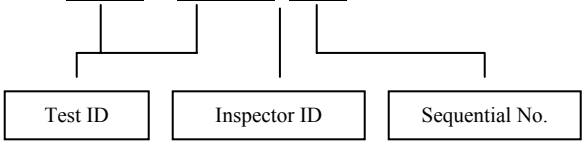


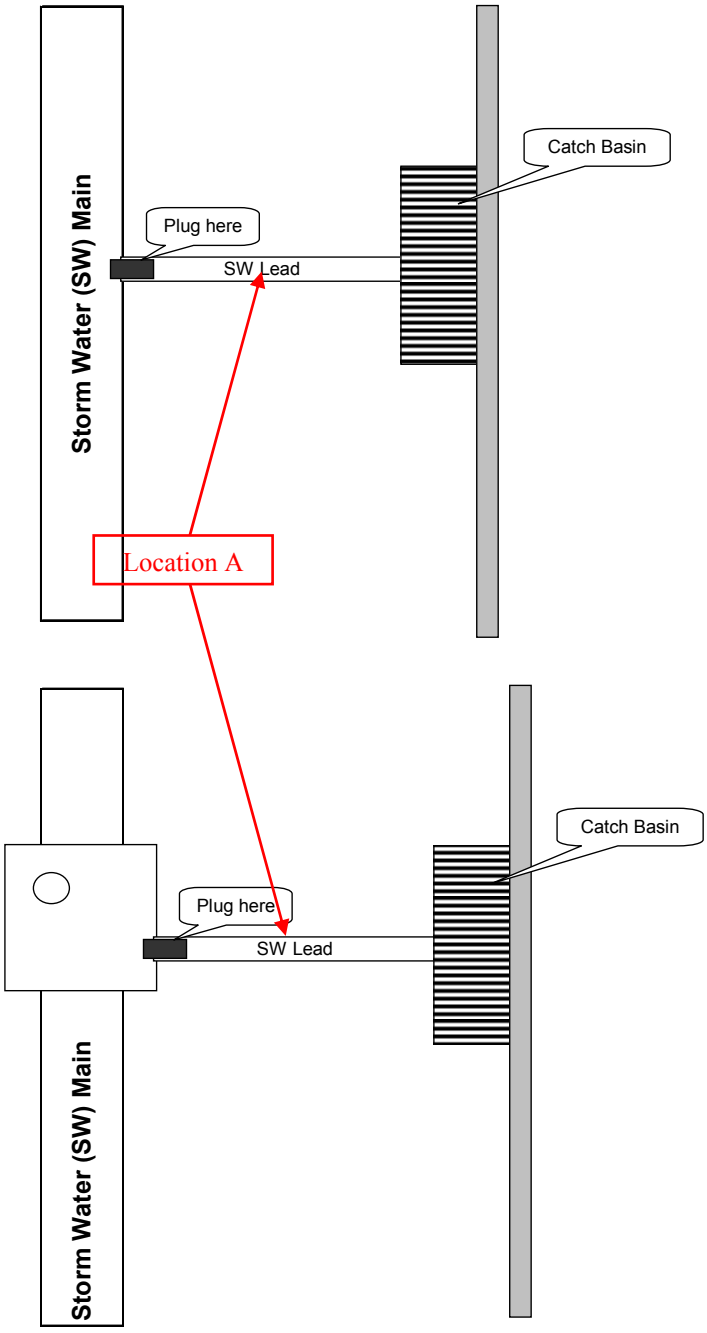
Report ID: D1032-033001.pdf



Observation and Video Inspection ID:

1032-033001-101




Storm Water (SW) Main
Plug here
SW Lead
Catch Basin
Location A
Storm Water (SW) Main
Plug here
SW Lead
Catch Basin